

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-13: (canceled).

14. (currently amended) ~~The~~ An abnormality diagnosing apparatus ~~according to Claim 13~~ used in a machine equipment including at least one rotating or sliding part, the abnormality diagnosing apparatus comprising:

at least one detecting portion for outputting a signal generated from the machine equipment as an electric signal; and

a signal processing portion for determining presence or absence of an abnormality and an abnormal portion of the part based on a frequency of a shockwave in which a waveform of the electric signal per unit time exceeds a threshold, and a rotational speed signal or a moving speed signal,

wherein the signal processing portion subjects the waveform of the electric signal to a filter processing and converts the waveform to an all time rectified waveform,

wherein whenever the waveform exceeding the threshold, the signal processing portion makes a waveform which is converted so as to hold the waveform at a value exceeding the threshold for a predetermined period of time according to the rotational speed signal, and

| wherein the processing portion informs a possibility of bringing about the abnormality in the part according to a number of times in which the waveform exceeds the threshold per a predetermined rotational number.

15. (original) The abnormality diagnosing apparatus according to Claim 14, wherein the signal processing portion determines true or false of the possibility of bringing about the abnormality in the part according to the number of times in which the waveform converted to hold the threshold exceeds the threshold per the predetermined rotational number by a plurality of times of statistical determinations.

16 and 17: (canceled).

| 18. (currently amended) ~~A~~An abnormality diagnosing apparatus used in a machine equipment including a rotating part, the abnormality diagnosing apparatus comprising:

 at least one detecting portion for outputting a signal generated from the machine equipment as an electric signal; and

 a signal processing portion for:

 analyzing a frequency of a waveform of the electric signal,

 comparing and checking a frequency component of a measured spectrum data provided by analyzing the frequency and a frequency component owing to the rotating part with an allowable width; and

| determining presence or absence of an abnormality and an abnormal portion of the rotating part based on a result of the checking;

wherein a zone having an upper limit and lower limit, both of which are calculated from the rotational speed of the rotating part and dimensional specification of the rotating part, is divided into at least one zone, a central value in the divided zone is calculated, and the allowable width is set as at least a zone having an arbitrary size which is given with respect to the central value, and

wherein the signal processing portion compares and checks the frequency component of the measured spectrum data and the frequency component owing to the rotating part at least at each of the allowable width.

19. (original) The abnormality diagnosing apparatus according to Claim 18, wherein the allowable width is given to at least one of a case where the rotating part includes a plurality of rotating parts having different dimensional specification design from each other; and a case where the rotational speed of the rotating part is varied.

20-34: (canceled).

35. (currently amended) ~~A~~An abnormality diagnosing method used in a machine equipment including a rotating part, the abnormality diagnosing method comprising the steps of:

- detecting a signal generated from the machine equipment and outputting the signal as an electric signal;
- analyzing a frequency of a waveform of the detected signal;
- setting at least one allowable width such that: a zone having an upper limit and lower limit, both of which are calculated from the rotational speed of the rotating part and dimensional

specification design of the rotating part, is divided into at least one zone, a central value in the divided zone is calculated, and the allowable width is set as at least a zone having an arbitrary size which is given with respect to the central value

comparing and checking a frequency component of a measured spectrum data provided by analyzing the frequency and a frequency component owing to the rotating part at each of at least one of the allowable width; and

determining presence or absence of an abnormality and an abnormal portion of the rotating part based on a result of the checking at the comparing step.

36 and 37: (canceled).